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Much has been written in recent years about the profession of management.¹ If one were to cull from this literature a list of relevant characteristics of the profession, it would appear somewhat as follows:

1. A body of established knowledge and practice (e.g., accounting, finance, marketing, industrial relations, etc.);
2. A dedication to the service of managing which overrides personal, and at times even organizational values;
3. A moral commitment which includes but is broader than the law.

This list, it should be noted, is more or less a stereotype for any profession; one need only replace "managing" with "medicine," "teaching," "law," to describe the appropriate base for other professions.

Of what use is such a list of professional qualities? One obvious answer is that the list in an extended form provides the base for deciding who should manage, just as the analogous list for medicine tells us who should be permitted to practice. More to the point of the present paper, the list supposedly tells us how one should prepare for the profession. I use the word "prepare" rather than "educate" to connote the broader scope which includes far more than formal courses or training programs. Presumably, the "body of established knowledge" can be transmitted through courses, but the development of dedication and morality come through other experiences.

What is really amazing in all the discussions of professionalism I

¹See, for example, Ethos and the Executive, by C. C. Walton, Prentice-Hall, Inc., 1969.

have read is the failure to even mention what must surely be the most important aspect of professional practice, namely, the ability to appreciate uncertainty and ambiguity. I say "appreciate" rather than "cope with," because the best professional is one who knows the positive as well as the negative value of uncertainty. If one compares the role of "established knowledge" with the role of uncertainty in professional practice, the ratio looks like our old friend the iceberg: a bit of shining knowledge atop an enormous submerged mass.

I want to pursue this more or less obvious point by discussing some of the aspects of uncertainty in management, and then asking whether there are appropriate pathways of preparation for appreciating uncertainty.

But first I need to point out that the term "uncertainty" is often discussed in the "body of established knowledge" of management these days, but in a sense that is largely irrelevant for managers. Uncertainty, we are told, relates to situations where the outcome of managerial actions cannot be accurately predicted, and where we must rely on probability measures or game theoretic strategies.²

Uncertainty in management is much more fundamental than probability of the type encountered, say, in a game of cards. In a game, one knows the rules, and can reasonably expect that the other players know them, too. Furthermore, one knows the objectives reasonably well, and can understand how well a given tactic has worked out. All of these neat

²See, for example, "Uncertainty," by A. Madansky in Systems Analysis and Policy Planning, ed. by E. S. Quade and W. I. Boucher, American Elsevier Publishing Co., Inc., 1968. Madansky does point out at the end of his article that the theory he outlines is only a "first approximation," and if used blindly, "reality can overwhelm you with realities." Of course, if one thinks he has a "first approximation," he also thinks he has an inkling of the next approximations, but the author does not tell us what his inkling is.

stipulations are lacking in management: there are no authorized rules of the game, objectives, or pay-offs.

The meaning of managerial uncertainty was well expressed by Immanuel Kant³ almost two centuries ago. In today's language, Kant attempted to describe three types of management. The first is management where the rules of the game are well specified. That is, some authority stipulates what is to be accomplished and the resources for accomplishing it; the "manager" then uses the resources according to the stipulations. Kant calls this type of management a "skill," and today most writers on management would seriously question whether a skill is management at all.

The second type of management is one which seeks to maximize the "value of a life," which, for our purposes here, can mean either a personal life or an organizational life. Kant points out that in this type of management, no amount of data can ever tell the manager what he should do to maximize the value, because data deal with specific instances, whereas the managerial problem deals with the "whole life," or, as we would say today, with the "whole system." As is well known, no set of data can accurately measure the performance of a firm, because the true performance must describe the true value of the firm to all its rightful beneficiaries, the stockholders, customers, employees, and public, for the entire duration of the firm. And yet no manager can avoid making some estimate of performance, because he must decide to act in a certain manner and not to act in other manners. Embedded in every managerial action of the second type is a judgment about the whole lives of all the firm's beneficiaries. The manager may not choose or be able to say what this

³Foundations of the Metaphysics of Morals, 1785.

judgment is, but it is there nonetheless. It should be noted, for the sake of the cautious incrementalist, that if the manager believes he can subdivide his system into "manageable" parts, and act in each part according to more restricted standards, he is making a system judgment, and one which cannot be substantiated by any amount of data.

It is important to point out right away that this type of uncertainty in management is not an evil, and does not imply pessimism. Uncertainty is not to be avoided like the plague simply because it isn't a disease. It is a reality which is to be valued for its own sake; a life of certainty would certainly be deadly. If a manager suppresses any reflection about his whole system judgments, and acts as though his objectives were absolutely clear and unambiguous, and as though his accomplishments really maximize the right values, then his uncertainty simply goes underground; more likely than not, it will show up in the discontent of his employees.

Of course there is the temptation to say that the manager is really not so uncertain as my account seems to make him, because after all he should be well informed about his organization and its environment, and his systemic judgments are not made in the dark. But this remark misses the central point about information. The manager may be in a position to say what has happened, or, if he's a real time enthusiast, what is happening at various points in his firm. But the basic managerial question is whether these happenings ought to happen the way they do. He may know that so many items of Product X were sold; his managerial question is "how many ought to have been sold?" If he "accepts" the past in making his decision, then implicitly he is saying that the past is OK, either because it was the best or could not be altered. But this is a whole system judgment. Whole system judgments shape the data; they give

the data their meaning for decision making.

It goes without further saying, I hope, that most Management Information Systems today are poorly designed because they have no explicit way of coping with the manager's problem of relevance. We can't say that an item of information is relevant for the manager unless we know what whole system judgments he is apt to make. I don't see this point even mentioned in recent books on information systems.

I am not arguing that information has little value for the manager; it clearly does. But its value depends fundamentally on how the manager judges the characteristics of his system.

It would be natural enough for the cautious reader to balk at this point, because for him the theme of the discussion either says too much or too little. It says too little if it merely points out that in any life there are vast mysteries no one can possibly penetrate. It says too much if it argues that the manager must really concern himself with a nebulous "whole system," when in fact he need only have regard for the forces that surround him, his allies and enemies. But the irritation of the cautious actually comes directly to the essence of the uncertainty: how much of the total image of life is the concern of any particular life?

What about preparation for a life of uncertainty? This is obviously as obscure as the uncertainty itself. In a way, it is preparation for a paradox, because the budding manager must also be prepared for action as well as uncertainty; we are certainly not preparing him for a life of hesitation and frustration. Nevertheless, we can talk about some inadequate modes of preparation. For example, the business schools which give the impression that sound management is based on sound principles of management are probably performing a disservice, although it's hard

to estimate how much this absurd falsity really harms the young man. I should hasten to add that this is an absurdity if the basic idea is the classical rationalist theory that the principle really governs the actions. On the other hand, the literature of management and social science does provide very valuable "if, then" principles; the premise of such principles is some judgment about the state of the system, and the conclusion is a suggestion for appropriate action. Thus the form of the principle becomes "if you judge that the system is in such-and-such a state, then it is suggested that action so-and-so is appropriate." Naturally, there is much to be said for preparing the future manager to appreciate such guides.

Perhaps the most irritating error of preparation is the exercises at the end of textbook chapters. The "quantitative" professors are the worst of the lot in this regard. An exercise gives the student all the information he needs to solve a problem, including the goals, constraints and costs. It is, in fact, an authority no sensible student would dare to ignore. Exercises are often dressed up as though they were "real" problems of managers.⁴ No one really knows how harmful this playful deception of the young student really is. Many of them are astounded to learn that in real life the data simply aren't there, and that no one really seems to be clear about the objectives of the organization. But perhaps this astonishment is not all that harmful; after all, it doesn't take too long to realize that life is not an exercise except within a university.

One might think that the "case method" is a little better in preparing

⁴See, for example, H. Wagner's Principles of Management Science, Prentice-Hall, Inc., 1970, which has the subtitle, "With Applications to Executive Decisions."

the student for uncertainty. I don't know, because I've never been able to use it successfully. Many cases suffer from the defect that the information is limited to the case description, whereas in real life one of the great uncertainties is whether to search for new information with a totally different outlook. Indeed, it must happen that some students make a systemic judgment which implies that all the information written in the case is irrelevant; I suppose that such students are wise enough to keep their mouths shut if the professor wrote the case.

There are really only two sensible ways in which the schools can look at the problem of preparing for managerial uncertainty. They can say that this is not their business at all, or they can say that it is their business and they'd better do something about it. If they say it is none of their business, then they say that they illuminate the top of the iceberg. If the student has no bottom, he sinks; it's that simple. We have been witnessing the changes in the illumination in the last dozen years since the appearance of the Pearson and Gordon-Howell reports. In part, these reports urged the schools to upgrade the quality of the formal curriculum by including more quantitative and behavioral science material. Whether intended or not, the recommendation undoubtedly took the schools further away from the policy of studying real organizations during formal education.

Even if the comparative isolation of the schools is maintained, I'd recommend consideration of more psychological material relating to the individual self. The tendency of behavioral science to ally itself to statistical methodology and mathematical models has often taken its concern away from the individual, who becomes a particular instead. The individual self is a "system," often very little understood. It is, in

fact, another basic uncertainty of life, but writers in both the West and East have had many wise things to say about it. For example, a course dealing with Joseph Campbell's Hero with a Thousand Faces might be a very appropriate preparation for management, because Campbell so well describes the vast uncertainties of the heroic archetype, and the deep need of the hero to make critical decisions in his adventure without any objective evidence to guide him. It might do the budding manager some good to realize that he is essentially preparing for a hero's life.

The policy opposite to the isolated school makes good sense, but it's awfully hard on the faculty. This is the familiar work-and-study plan in any of its various forms. Recent events have suggested an extension of the plan to include active student participation in matters of social concern; e.g., peace, pollution and poverty. Thus the student learns the need to make systemic judgments and defend them, which is the essence of real life in organizations. He learns this while he's getting his "established knowledge," not afterwards. To use an obvious example, he learns about the politics of accounting data while he's learning about the theory and practice of accounting.

But, as I say, the work-and-study idea is hard on the faculty, mainly because business schools are often poorly designed to implement the idea, and it is not clear how it should be implemented. If work is to be related to study, it looks as though the faculty would have to give extensive individual attention to students. It may be that "learning centers" are the answer to this problem, where students teach students. It may also be true that the technology of classrooms is outmoded.

But perhaps the time has come to try to invent more radical approaches to preparation. The following is illustrative of what I mean. It is

based on the idea that it is always possible and often very useful to look at an organization through entirely different spectacles, so that its obvious purpose and structure are changed. For example, banks may be viewed as being in the information processing and storage business. A "deposit" then becomes a partially private piece of information about someone's liquidity condition, just as a loan is information about his ability, say, to invest. When banks are looked at in this manner there are a number of interesting questions of organizational design, investment and personnel that naturally arise. This is not to say that the primary view of the bank as a monetary agency is lost; but the new perspective may suggest long range planning strategies that were blocked out by the old perspective.

Now, most firms can be viewed as though they were in the business of preparing people for management. This seems more or less obvious, because most firms are interested in developing their managerial talents, e.g., promoting the right kind of person and therefore motivating the younger men to mature in certain directions, and so on. Of course some firms are very explicit about their management development programs, but the viewpoint is much broader and deeper than evening courses or executive development programs. Indeed, it is not absurd at all to suggest that the measure of a firm's success is its ability to prepare people for management (which obviously includes retaining its best prepared managers.)

Thus most firms can be viewed as being in the same business as business schools. But the converse doesn't work very well: it's pretty hard to make the case that the business schools are industrial enterprises. The radical suggestion, then, is that this is what is wrong with the business schools: they can't be viewed as businesses. If they could be

so viewed, then they would do far better in the job of preparation.

To be specific, imagine a consortium of organizations, which I think should include not only business firms, but also government agencies, religious groups, unions, political groups, etc. The consortium can be viewed in the standard way, where each organization pursues its own specific goal. It can also collectively be viewed as a "management school," i.e., as an organization whose purpose is to prepare people for managing. I haven't thrown the professors out, because this second way of viewing the consortium may suggest that some group of persons needs to be hired to bind the purpose together, to teach the "body of knowledge," and to promote research that will improve the quality of preparation. But the "school" is more than the collection of the faculty, even if such a collection is desirable. The school is the entire consortium. Everyone in the consortium is a potential student and teacher. We might even get around to abolishing degrees, since this intermediate labelling of merit might be superfluous. Certainly grades would become very minor considerations, only to be given, say, when somebody's ego needs bolstering.

I am very uncertain whether such a consortium would work, because to determine whether it would or not I'd have to know enough about the world of business firms, government agencies and traditional faculty to see how they could be managed to promote managerial education. In other words, as a writer on management I also have to appreciate uncertainty. I might add that if one were obliged to answer all the dubious points about such a design of management education before it could get started, then it would never get started.

In conclusion, I need to return to Kant, and have a look at his third type of management which he called moral. Such management acts with the

moral law as its sole motivation. It is strange how morality in the professions, though always mentioned in any list of professional qualities, is treated so gingerly and niggardly. Fairness and honesty seem about as far as the professions want to go, so that price fixing gets to be the most cited example of immoral practice. All this may or may not be changing, depending on which kind of systemic judgment one makes about society. The tendency of youth to question the morality of the firm, the state and the church may simply be a temporary fad or a fundamental change of attitude about morality. Is the pollution of water and air immoral? Is the sometimes harsh treatment of unorganized poor labor immoral? Is it immoral to make a young man of nineteen decide between jail or war?

It is often said that morality is essentially obscure, because people and cultures do not agree about what is right and wrong. That is, morality is uncertain. The trouble is that in the case of morality there is the strong tendency to say that it's all "relative," even though in the case of the uncertainty of the second type ("maximizing the value") people don't think it's relative: they believe that there really are good managers.

I see no reason why morality should be so inadequately treated by managers and management writers. If there exist moral laws they are at least as difficult to state as corporate long range objectives.

As far as preparation is concerned, I'm inclined to say that morality is altogether a community type of education, in which everyone shares, including the past (through its literature) and the future (through our vision of it). A good example of the breakdown of moral education today is the complete failure of the liberal or radical student to share moral

education with the construction worker or Bircher. What the country needs is "morality classes," where people of differing opinion can try to learn more from the differences than they can ever learn from the agreements they share with their own crowd.

Just how such classes might be organized and conducted appears to me to be very uncertain. Thank God.